

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/10187

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Compound and use claims are drafted in such a broad and vague style ("an organic residue", "a charged group", "a group capable of being substituted") that they encompass many known compounds/processes. The initial phase of the search revealed thus a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of the claim(s) may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT). For these reasons, a meaningful search over the whole breadth of the claim(s) is impossible. Consequently, the search is only complete for:

Claims 18 (i. e. the use of methanol as coreagent)
examples 1-6 of the description.

Only illustrative documents have been cited for other parts of the claims.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C25B3/02 C07D207/12 C07D211/96 C07C237/06 C07D295/18
C07D295/22 C07D207/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C25B C07D C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BEILSTEIN Data, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HORNER, L; RUPRECHT, H-D: "Studien zum Vorgang der Wasserstoffübertragung 23 Modellversuche Zur Wirkungsweise der Leitsalze bei elektrochemischen Reduktionen" TETRAHEDRON LETTERS, vol. 32, 1970, pages 2803-2806, XP009010773 page 2804 - page 2805 table 4 ----- -/--	1-9, 11, 12, 14, 15, 19-27, 29

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

16 December 2003

Date of mailing of the international search report

02/01/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EKAMBARAM A; THOMAS R; BUCKLEY D A; KAMPMEIER J A; TARBELL D S: "The action of bases on 1-mercaptopropyltrimethylammonium iodide" JOURNAL OF ORGANIC CHEMISTRY, vol. 32, 1967, pages 2985-2987, XP002241081 page 2986, column 1; example A	1-9, 12, 14, 15, 20-26, 29
X	KAGEYAMA T; YAMAMOTO T: "Electrolytic preparation of tetraalkylammonium bromides from the corresponding bromides" CHEMISTRY LETTERS, 1980, pages 671-672, XP009010772 page 672; table 1	1-5, 12-15, 19
X	MÉDEBIELLE M; OTURAN A M; PINSON J; SAVÉANT J-M;: "A new convenient synthesis of 5-aryl uracils using SRN1 aromatic nucleophilic substitution" TETRAHEDRON LETTERS, vol. 34, no. 21, 1993, pages 3409-3412, XP009010774 page 3411; table	1, 6, 9, 12-15
X	KOIZUMI K; FUCHIGAMI T; EL-SHAHAT KANDEEL Z: "Reaction mechanism of cathodic crossed coupling of acetone with unsaturated compounds in acidic solution" BULLETIN OF THE CHEMICAL SOCIETY OF JAPAN, vol. 59, no. 3, 1986, pages 757-762, XP009010780 page 759; example 8; table 1	1-5, 12, 14, 15, 19-22, 24-26, 28, 29
X	HORNER L; MENTRUP A: "Versuche zum Vorgang der Wasserstoffübertragung IV Reduktiver Abbau Quartärer Ammoniumsalze an der Blei- bzw. Quecksilberkathode" JUSTUS LIEBIGS ANNALEN DER CHEMIE, vol. 646, 1961, pages 49-64, XP009010771. tables 1-4	1-7, 12-15, 19
X	SCHLUMBACH H H: "Über das Tetraäthylammonium" CHEMISCHE BERICHTE, vol. 53, 1920, pages 1689-1693, XP009010820 page 1690 - page 1691	1-5, 12, 14, 15, 19

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JONCZYK A ET AL: "BASE-MEDIATED REACTION OF QUATERNARY AMMONIUM SALTS WITH NITROARENES - THEIR USEFUL FUNCTIONALIZATION VIA VICARIOUS NUCLEOPHILIC SUBSTITUTION (VNS)" SYNTHESIS, GEORG THIEME VERLAG. STUTTGART, DE, no. 5, 2002, pages 674-680, XP001089018 ISSN: 0039-7881 page 674; figure 2; example 1e -----	20-29
X	DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; RUCKA MAGDALENA ET AL.: "New biocides for cooling water treatment. I. Selected quaternary ammonium salts" XP0002242352 Database accession no. 98:84788 Compounds with RN 69371-33-1; 69371-34-2; 84309-48-8; 84309-49-9; 84309-50-2 abstract & ENVIRONMENT PROTECTION ENGINEERING, vol. 6, no. 4, 1980, pages 455-464, -----	20-28
X	RENSHAW R R; HOTCHKISS H T: "Basis for the physiological activity of onium compounds" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 103, no. 1, 1933, pages 183-186, XP002265192 page 185; table 1 -----	20-28
X	BANCI F: "Acylthiazolidines" JOURNAL OF MEDICINAL CHEMISTRY, vol. 14, no. 1, 1971, pages 82-83, XP002265193 page 82; table 1 -----	20-28
P,X	EP 1 247 880 A (GOLDSCHMIDT AG TH) 9 October 2002 (2002-10-09) paragraph '0029! examples 1-3 -----	1-11, 20-28
A	SHONO T; MATSUMURA Y; TSUBATA K; UCHIDA K; KANAZAWA T; TSUDA K: "Electroorganic chemistry 81: Anodic oxidation of sulfonamides and amidophosphates" JOURNAL OF ORGANIC CHEMISTRY, vol. 49, 1984, pages 3711-3716, XP002241082 page 3712; table II page 3714, column 2 -----	1-29

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SHONO T; MATSUMURA Y; TSUBATA K: "Electroorganic chemistry 46: A new carbon-carbon bond forming reaction at the alpha-position of amines utilizing anodic oxidation as a key step" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 103, 1981, pages 1172-1176, XP002241083 page 1172; figure I page 1175, column 1	1-29
A	DE 28 42 760 A (BAYER AG) 10 April 1980 (1980-04-10) cited in the application the whole document	1-29

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1247880	A	09-10-2002	DE 10117222 A1	24-10-2002
			EP 1247880 A2	09-10-2002
			JP 2003013270 A	15-01-2003
			US 2002157943 A1	31-10-2002
DE 2842760	A	10-04-1980	DE 2842760 A1	10-04-1980
			DE 2960899 D1	10-12-1981
			EP 0009697 A2	16-04-1980
			JP 55049348 A	09-04-1980